

10/537612

SEQUENCE LISTING

<110> Imperial College Innovations Ltd

<120> Engineering Redox Proteins

<130> Q88296

<140>

<141>

<160> 11

<170> PatentIn Ver. 2.1

<210> 1

<211> 84

<212> DNA

<213> Escherichia coli

<220>

<221> CDS

<222> (1)..(84)

<223> Helix 1 of E.coli repressor of primer (rop)

<400> 1

acc	aaa	caa	gaa	aaa	acc	gcc	ctt	aac	atg	gcc	cgc	ttt	atc	aga	agc	48
Thr	Lys	Gln	Glu	Lys	Thr	Ala	Leu	Asn	Met	Ala	Arg	Phe	Ile	Arg	Ser	
1				5				10						15		

cag	aca	tta	acg	ctt	ctg	gag	aaa	ctc	aac	gag	ctg	84
Gln	Thr	Leu	Thr	Leu	Leu	Glu	Lys	Leu	Asn	Glu	Leu	
		20				25						

<210> 2

<211> 28

<212> PRT

<213> Escherichia coli

<400> 2

Thr	Lys	Gln	Glu	Lys	Thr	Ala	Leu	Asn	Met	Ala	Arg	Phe	Ile	Arg	Ser
1				5				10						15	

Gln	Thr	Leu	Thr	Leu	Leu	Glu	Lys	Leu	Asn	Glu	Leu
		20				25					

<210> 3

<211> 84

<212> DNA

<213> Escherichia coli

<220>

<221> CDS

<222> (1)..(84)

<223> Helix 2 of rop

<400> 3

gat	gaa	cag	gca	gac	atc	tgt	gaa	tcg	ctt	cac	gac	cac	gct	gat	gag	48
Asp	Glu	Gln	Ala	Asp	Ile	Cys	Glu	Ser	Leu	His	Asp	His	Ala	Asp	Glu	
1				5					10					15		

ctt	tac	cgc	agc	tgc	ctt	gcc	cgt	ttc	ggc	gac	gac					84
Leu	Tyr	Arg	Ser	Cys	Leu	Ala	Arg	Phe	Gly	Asp	Asp					
			20					25								

<210> 4

<211> 28

<212> PRT

<213> Escherichia coli

<400> 4

Asp	Glu	Gln	Ala	Asp	Ile	Cys	Glu	Ser	Leu	His	Asp	His	Ala	Asp	Glu
1				5					10					15	

Leu	Tyr	Arg	Ser	Cys	Leu	Ala	Arg	Phe	Gly	Asp	Asp				
			20					25							

<210> 5

<211> 192

<212> DNA

<213> Escherichia coli

<220>

<221> CDS

<222> (1)..(192)

<223> wild type dimeric rop

<400> 5

atg	ggt	acc	aaa	caa	gaa	aaa	acc	gcc	ctt	aac	atg	gcc	cgc	ttt	atc	48
Met	Gly	Thr	Lys	Gln	Glu	Lys	Thr	Ala	Leu	Asn	Met	Ala	Arg	Phe	Ile	
1				5					10					15		

aga	agc	cag	aca	tta	acg	ctt	ctg	gag	aaa	ctc	aac	gag	ctg	gac	gcg	96
Arg	Ser	Gln	Thr	Leu	Thr	Leu	Leu	Glu	Lys	Leu	Asn	Glu	Leu	Asp	Ala	
			20					25					30			

gat	gaa	cag	gca	gac	atc	tgt	gaa	tcg	ctt	cac	gac	cac	gct	gat	gag	144
Asp	Glu	Gln	Ala	Asp	Ile	Cys	Glu	Ser	Leu	His	Asp	His	Ala	Asp	Glu	
		35					40					45				

ctt	tac	cgc	agc	tgc	ctt	gcc	cgt	ttc	ggc	gac	gac	ggg	gaa	aac	ctg	192
Leu	Tyr	Arg	Ser	Cys	Leu	Ala	Arg	Phe	Gly	Asp	Asp	Gly	Glu	Asn	Leu	
	50					55					60					

<210> 6

<211> 64  
 <212> PRT  
 <213> Escherichia coli

<400> 6  
 Met Gly Thr Lys Gln Glu Lys Thr Ala Leu Asn Met Ala Arg Phe Ile  
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 Arg Ser Gln Thr Leu Thr Leu Leu Glu Lys Leu Asn Glu Leu Asp Ala  
                   20                  25                  30  
 Asp Glu Gln Ala Asp Ile Cys Glu Ser Leu His Asp His Ala Asp Glu  
           35                  40                  45  
 Leu Tyr Arg Ser Cys Leu Ala Arg Phe Gly Asp Asp Gly Glu Asn Leu  
   50                  55                  60

<210> 7  
 <211> 384  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Monomeric rop  
       containing all 4 helices in one continuous  
       sequence

<220>  
 <221> CDS  
 <222> (1)..(384)  
 <223> Monomeric rop consisting of helices 1-1'-2'-2 and  
       helices 1 and 1', and 2' and 2 are connected by  
       GGGGG loops

<400> 7  
 atg ggt acc aaa caa gaa aaa acc gcc ctt aac atg gcc cgc ttt atc 48  
 Met Gly Thr Lys Gln Glu Lys Thr Ala Leu Asn Met Ala Arg Phe Ile  
   1                  5                  10                  15  
 aga agc cag aca tta acg ctt ctg gag aaa ctc aac gag ctg ggt ggc 96  
 Arg Ser Gln Thr Leu Thr Leu Leu Glu Lys Leu Asn Glu Leu Gly Gly  
           20                  25                  30  
 ggt ggc ggt acc aaa caa gag aag acc gcc ctt aac atg gcc cgc ttt 144  
 Gly Gly Gly Thr Lys Gln Glu Lys Thr Ala Leu Asn Met Ala Arg Phe  
           35                  40                  45  
 atc aga tct cag aca tta acg ctt cta gag aag ctt aac gag ctc ggg 192  
 Ile Arg Ser Gln Thr Leu Thr Leu Leu Glu Lys Leu Asn Glu Leu Gly  
   50                  55                  60  
 gcg gat gaa cag gca gac ata tgt gaa tcg ctt cac gac cac gct gat 240  
 Ala Asp Glu Gln Ala Asp Ile Cys Glu Ser Leu His Asp His Ala Asp  
   65                  70                  75                  80

gag ctt tac cgc agc tgc ctt gcc cgt ttc ggt ggc ggt ggc ggt gcg 288  
 Glu Leu Tyr Arg Ser Cys Leu Ala Arg Phe Gly Gly Gly Gly Gly Ala  
                     85                    90                    95

gat gaa cag gca gac atc tgt gaa tcg ctt cac gac cac gct gat gag 336  
 Asp Glu Gln Ala Asp Ile Cys Glu Ser Leu His Asp His Ala Asp Glu  
                     100                    105                    110

ctt tac cgc agc tgc ctt gcc cgt ttc ggc gac gac ggt gaa aac ctg 384  
 Leu Tyr Arg Ser Cys Leu Ala Arg Phe Gly Asp Asp Gly Glu Asn Leu  
                     115                    120                    125

<210> 8

<211> 128

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Monomeric rop  
 containing all 4 helices in one continuous  
 sequence

<400> 8

Met Gly Thr Lys Gln Glu Lys Thr Ala Leu Asn Met Ala Arg Phe Ile  
   1                    5                    10                    15

Arg Ser Gln Thr Leu Thr Leu Leu Glu Lys Leu Asn Glu Leu Gly Gly  
                     20                    25                    30

Gly Gly Gly Thr Lys Gln Glu Lys Thr Ala Leu Asn Met Ala Arg Phe  
                     35                    40                    45

Ile Arg Ser Gln Thr Leu Thr Leu Leu Glu Lys Leu Asn Glu Leu Gly  
                     50                    55                    60

Ala Asp Glu Gln Ala Asp Ile Cys Glu Ser Leu His Asp His Ala Asp  
   65                    70                    75                    80

Glu Leu Tyr Arg Ser Cys Leu Ala Arg Phe Gly Gly Gly Gly Gly Ala  
                     85                    90                    95

Asp Glu Gln Ala Asp Ile Cys Glu Ser Leu His Asp His Ala Asp Glu  
                     100                    105                    110

Leu Tyr Arg Ser Cys Leu Ala Arg Phe Gly Asp Asp Gly Glu Asn Leu  
                     115                    120                    125

<210> 9

<211> 19

<212> DNA

<213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: psp7 upstream  
 amplification sequence

<400> 9  
 gcgaaattaa tacgactca

19

<210> 10  
 <211> 23  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: asp4  
 downstream amplification sequence

<400> 10  
 gttggctgct gccaccgctg agc

23

<210> 11  
 <211> 128  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: RDM14.5

<400> 11  
 Met Gly Thr Lys Gln Glu Lys Thr Ala Leu Asn Met Ala Arg Phe Ile  
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 Arg Ser Gln Thr Leu Thr Leu Leu Glu Lys Leu Asn Glu Leu Gly Gly  
                   20                  25                  30  
 Gly Gly Gly Thr Lys Gln Glu Lys Thr Ala Leu Asn Met Ala Arg Phe  
           35                  40                  45  
 Ile Arg Ser Gln Thr Leu Thr His Leu Glu Lys Leu Asn Glu Leu Gly  
       50                  55                  60  
 Ala Asp Glu Gln Ala Asp Ile Cys Glu Ser Leu Ala Asp Trp Ala Asp  
   65                  70                  75                  80  
 Glu Leu Tyr Arg Ser Cys Leu Ala Arg Phe Gly Gly Gly Gly Gly Ala  
                   85                  90                  95  
 Asp Glu Gln Ala Asp Ile Cys Glu Ser Leu Ala Asp Trp Ala Asp Glu  
          100                 105                 110  
 His Tyr Arg Ser Cys Leu Ala Arg Phe Gly Asp Asp Gly Glu Asn Leu  
      115                 120                 125